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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/549,765	01/11/2007	Kilian Saueressig	B&B-136	3614

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EXAMINER	
MINSKEY, JACOB T	

ART UNIT	PAPER NUMBER
1791	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/549,765	SAUERESSIG, KILIAN	
	Examiner	Art Unit	
	JACOB T. MINSKEY	1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 January 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *15-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *15-25 and 27-33* is/are rejected.

7)☒ Claim(s) *26 and 34* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *9/19/2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. The Examiner acknowledges the cancellation of claims 1-14 and the addition of new claims 15-34.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. **Claims 15-22, 24-25, 27, and 31-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Forster et al, USP 3,977,089 in view of Dale, USP 5,037,663**.

5. Regarding claims 15 and 31, Forster teaches a method of drying fibers (column 6 line 42-44) comprising: treating a parent fiber product with a fluid medium such that fibers of the parent fiber product are at least partially wetted (steam column 5 line 30 and aqueous slurry, column 5 line 33, and column 7 lines 3-9), and rapidly evaporating

the fluid medium by irradiation between the fibers (microwave radiation/drying, see column 7, also described as drying or reduction of water content).

6. Forster describes the use of microwave heating/drying as a method that removes water and other volatiles to below the detectable limits (see column 9 line 57 – column 10 line 6). Forster is silent on the affect the evaporation of the volatiles will have on the fibers.

7. In the same field of endeavor of increasing the physical properties of fibers, Dale teaches that irradiation methods for delignification and physical treatments are known in the art. Dale also explicitly teaches that the fibers are "puffed" by rapid expansion of volatiles inside the fiber to decrease the bulk density by increasing the volume (column 8 line 61 – column 9 line 20). While Dale teaches a preferred method of "puffing" the fibers through evaporation caused by a chemical reaction, the teaching of increasing the absorbency and reactivity of the fibers by physically increasing the volume by gas expansion is explicitly taught.

8. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of Dale in the Forster method for the benefit of utilizing the known non-compaction method of microwave irradiation in a manner to increase the volume (increase the distance between the fibers) of the fibers in order to make a final product that has an increased reactivity and absorbency (Dale column 9).

9. Regarding claims 16-17, 19, and 32-33, Forster further teaches that the parent fiber product is homogeneously wetted by vapor saturation (column 5 line 30 and lines 29-35).

10. Regarding claim 18, Forster further teaches that the parent fiber product is one of wetted and saturated by fluid medium in the form of an emulsion (the Examiner considers the teaching of a agitated water to form a slurry to read on this limitation, column 5 lines 31-33).

11. Regarding claims 20 and 27, Forster and Dale remain as applied above and further teach that the fibers contact each other at contact points, and wherein the kinematic effect on the fibers compacts the fibers on the contact points. While neither reference provides a picture nor explicit description, the increase of volume taught by Dale would inherently provide the present of contact centers in the fiber, due to a material that has decreased bulk density and increased volume with the same amount of material.

12. Regarding claims 21 and 22, Forster further teaches that the fluid medium is rapidly evaporated by microwave radiation (see claims 1 and column 3 lines 31-33).

13. Regarding claim 24, Forster inherently teaches that the microwave radiation is absorbed less by the fibers than by the fluid media (inherent from the teaching of no damage to the fibers and the high quality non-compacted products produced, see abstract and examples).

14. Regarding claim 25, Forster teaches that the exposure time is between approximately 1 um and approximately 1000 ms (teaches 1 second in Example 6).

15. Regarding claim 28, Dale further teaches subsequent to the rapid evaporation of the fluid medium, the parent fiber product with a fluid fixative (inherently taught through the “freezing” of the cellulose fiber, see abstract) .

16. Claims 29-30 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Dale, USP 5,037,663.

17. Regarding claims 29 and 30, these claims are product by process claims, see MPEP § 2113. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself (i.e., differences in product characteristics), and not on its method of production.

18. "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

19. In the present instance, all that is claimed is an absorbent fiber product, which is shown by Dale. See also rejection of claim 15 above.

20. Claims 29-30 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Troxell et al, US Patent Publication 2005/0145353.

21. Regarding claims 29 and 30, these claims are product by process claims, see MPEP § 2113. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself (i.e., differences in product characteristics), and not on its method of production.

22. "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

23. In the present instance, all that is claimed is an absorbent fiver product, which is shown by Troxell (see [0042] for microwave drying and abstract for rolled tissue.

Claim Rejections - 35 USC § 112

24. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

25. Claim 23 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

26. Where applicant acts as his or her own lexicographer to specifically define a term of a claim contrary to its ordinary meaning, the written description must clearly redefine the claim term and set forth the uncommon definition so as to put one reasonably skilled in the art on notice that the applicant intended to so redefine that claim term. *Process Control Corp. v. HydReclaim Corp.*, 190 F.3d 1350, 1357, 52 USPQ2d 1029, 1033 (Fed. Cir. 1999).

27. Regarding claim 23, Applicant presents that the microwave radiation comprises wavelengths of between approximately 1000 nm and approximately 1000 μm. The provided wavelengths are not within the known wavelength spectrum for microwaves. NASA has the following chart presented for the different regions of the Electromagnetic Spectrum (at http://imagine.gsfc.nasa.gov/docs/science/know_l1/spectrum_chart.html):

Listed below are the approximate wavelength, frequency, and energy limits of the various regions of the electromagnetic spectrum.

	Wavelength (m)	Frequency (Hz)	Energy (J)
Radio	$> 1 \times 10^{-1}$	$< 3 \times 10^{9}$	$< 2 \times 10^{-24}$
Microwave	$1 \times 10^{-3} - 1 \times 10^{-1}$	$3 \times 10^{9} - 3 \times 10^{11}$	$2 \times 10^{-24} - 2 \times 10^{-22}$
Infrared	$7 \times 10^{-7} - 1 \times 10^{-3}$	$3 \times 10^{11} - 4 \times 10^{14}$	$2 \times 10^{-22} - 3 \times 10^{-19}$
Optical	$4 \times 10^{-7} - 7 \times 10^{-7}$	$4 \times 10^{14} - 7.5 \times 10^{14}$	$3 \times 10^{-19} - 5 \times 10^{-19}$
UV	$1 \times 10^{-8} - 4 \times 10^{-7}$	$7.5 \times 10^{14} - 3 \times 10^{16}$	$5 \times 10^{-19} - 2 \times 10^{-17}$
X-ray	$1 \times 10^{-11} - 1 \times 10^{-8}$	$3 \times 10^{16} - 3 \times 10^{19}$	$2 \times 10^{-17} - 2 \times 10^{-14}$
Gamma-ray	$< 1 \times 10^{-11}$	$> 3 \times 10^{19}$	$> 2 \times 10^{-14}$

28. The provided ranges do not correlate with the commonly accepted ranges for microwaves and are indefinite for that reason.

Allowable Subject Matter

29. Claims 26 and 34 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

30. The following is a statement of reasons for the indication of allowable subject matter: claims 26 and 34 provide a power density of approximately 10^3 to approximately 10^6 W/mm^2. This power density is well above the commonly known parameters that is commonly used in microwave drying. While Forster teaches power use of 75 kW, it is over a 75 foot pipe with a 3.5 inch diameter. This greatly lowers the power density utilized, and the claimed range is distant enough from the prior art ranges that it would not have been obvious to one of ordinary skill in the art at the time of the invention to increase the power usage to such a degree.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JACOB T. MINSKEY whose telephone number is (571)270-7003. The examiner can normally be reached on Monday to Friday 7:30-5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JTM

/Eric Hug/
Primary Examiner, Art Unit 1791